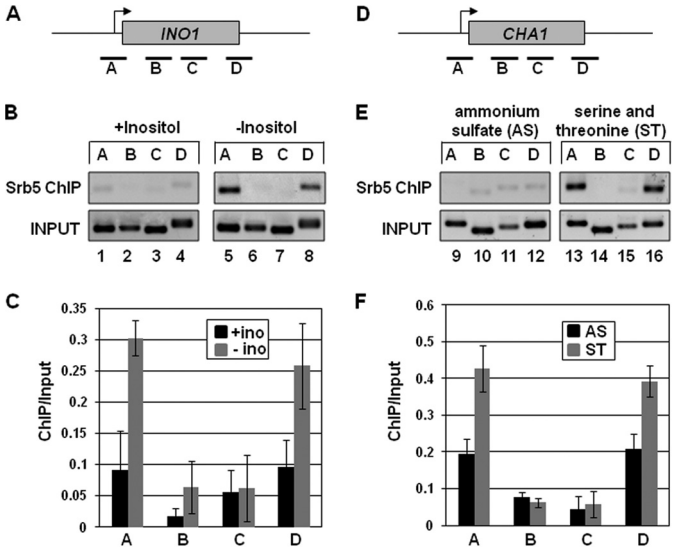
Papers of the Week

The Other Way of Stopping: Novel Role of Mediator Complex in Termination of Transcription ♦

♦ See referenced article, *J. Biol. Chem.* 2011, **286,** 37053–37057

Novel Role for Mediator Complex Subunit Srb5/Med18 in Termination of Transcription

Initiation of eukaryotic transcription is facilitated by Mediator, a multisubunit complex that recruits transcription factors and RNA polymerase II (RNAP II) to promoter regions. In their Paper of the Week, Mukundan and Ansari demonstrate that Srb5/Med18, a subunit of Mediator, is additionally required for the proper termination of transcription. Previous reports had indicated that Srb5/Med18 interacts with subunits of RNAP II known to be involved in the termination of transcription. Using ChIP analysis, the authors demonstrate that Srb5/Med18 is indeed found at both the 5′ and 3′ ends of genes but not with the gene body, providing more evidence of its likely dual role in both transcription initiation and termination. In *srb5*$^{-}$ cells, the authors found that transcription initiation is able to proceed normally but that termination factors are not found at the 3′ end, resulting in accumulation of RNAP II and production of run-on RNA fragments. These results indicate that Srb5/Med18 is necessary for termination of transcription through both its recruitment of termination factors and release of RNAP II. Knowing that genes in yeast are often looped during transcription, the authors therefore postulate that Srb5/Med18, within the Mediator complex, serves to bridge the promoter and terminator regions. Intriguingly, this architecture would allow RNAP II to restart transcription immediately upon termination, a point for future studies.



Srb5/Med18 cross-links to the promoter and terminator regions of *INO1* and *CHA1*.

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